

ABSTRACT OF THE DISCLOSURE

A semiconductor device array comprising highly densely arranged nano-size semiconductor devices is prepared by a simple method. The array comprises a porous body having cylinder-shaped pores formed by removing cylinder-shaped regions from a structure that includes a matrix member formed so as to contain silicon or germanium and the cylinder-shaped regions containing aluminum and dispersed in the matrix member, semiconductor regions formed in the pores, each having at least a p-n or p-i-n junction, and a pair of electrodes, arranged respectively on the top and at the bottom of the semiconductor regions. The semiconductor regions and the pair of electrodes form a plurality of semiconductor devices on a substrate.